REMARKS

This amendment is submitted in response to the Examiner's Action dated November 16, 2004. Applicant has amended several claims to clarify key features of the invention. No new matter has been added, and the amendments place the claims in better condition for allowance. Applicant respectfully requests entry of the amendments to the claims. The discussion/arguments provided below reference the claims in their amended form.

CLAIMS REJECTIONS UNDER 35 U.S.C. § 103

In section 2 of the present Office Action, Claims 1-14 and 20-36 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *Robertson, et al.* (U.S. Patent No. 6,594,799) in view of *Dole* (U.S. Patent No. 6,634,008). Further, in section 3 of the present Office Action, Claims 15-19 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *Robertson* in view of *Dole* and further in view of *Dragulev, et al.* (U.S. Publication No. 2001/0037407).

None of the above references or the combinations of references suggests the subject matter of Applicant's claims. Applicant first identifies several of the general deficiencies found within the references and combinations thereof as they apply to Applicants' claimed invention. Then, Applicants present arguments within delineated sections addressing the rejections of specific claims. The clarifications or examples given for claim elements/features are provided solely to clear up any misunderstanding/mischaracterizations that Examiner may have with respect to Applicant's invention and are not intended to limit the scope of the invention as originally filed.

A. Applicant's Claimed Invention (& Claims 1, 28, etc.)

Applicant's invention provides a seamless integrated design data repository (*see*, for example, Fig 7). With Applicant's invention, heterogeneous design data (informational structures) are compiled into a single format (syntax) and a single repository (database). Applicant's invention allows various design services, design tools, and designers (design personnel/engineers) to work from a unified interface whether local or remote (Figure 4, 5, and 7) and have access to all the necessary design data and design rules in a single standard format and environment (SOCML database 406). Applicant's invention, with its associated methods

RAL920000098US1   -10-

and utilities ensure all dispersed design data and design rules are collected, compiled and maintained in the central repository for each stage of design (Figure 3).

Applicant's invention generates and compiles the data necessary for applications (both internal and external). Further, Applicant's system (as shown in Figure 8) identifies the tools and expertise required for a design task (809) and creates a task schedule and action list (819), as well as alternatives (825) and a detail schedule of task and resource allocations (827).

None of the above active functions are covered by the passive interface provided by *Robertson*'s system or the interfaces provided by the other references. *Robertson* also does not provide a single, unified database, as recited by Applicant's Claim 1.

Robertson

Robertson provides a collection of databases (as described below) and does not provide or suggest providing access to a single unified virtual database. *Robertson* is concerned with catalogs of parts and information about vendors (*see* col. 8, lines 36 - 60), which is inherently distinct from and not suggestive of the "design data" described by Applicants' claimed invention.

Robertson's system acts as an aggregate point for many suppliers (Robertson - col 8, lines 21-35) providing passive access to external data. No integration of data and no refinement are provided. *Robertson*'s portal acts as an intermediary between the outside entities and the applications available at the portal.

Robertson's portal, described in Figure 2 (204) serves as an interface/intermediary between internal and external applications (col. 7, lines 36-57). There is no mention of and no mechanism for any data or service transformation. There is also no mention or suggestion of providing an integrated and single virtual design database. The portal merely receives requests and passes them through.

RAL920000098US1   -11-

Dole

The system described by *Dole* serves as a methodology manager where predefined design tasks are completed by specific engineers and brought together for integration (col. 5, lines 10-41). *Dole*'s system provides for an orderly design and test of an integrated circuit (col. 6, lines 19-26). Thus, in contrast to Applicant's invention, *Dole* does not provide a virtual design database and/or any active collaboration. Rather *Dole* partitions design tasks into sub-methodology steps and each step is performed on a specific tool by specific designer and then brought together (col. 5, lines 32-45).

At col. 12, lines 25-35, *Dole* describes how a designer follows a set of steps to perform logic synthesis, using a synthesis tool and following a predefined synthesis set of steps. There is no mechanism for integration of various heterogeneous design data from different sources to enable such a synthesis, as is provided by Applicant's claimed invention. *Dole* describes an environment where all necessary components and tools and design files exist in the proper format and all is needed is to follow a set of steps to complete the synthesis. If a design component was completed in a different design format or design tool, it is not clear how *Dole*'s environment would handle it. Applicant's system (as shown in Figures 4, 5, and 6) provides standard schema and methods to extract the necessary data for each design task and recompile and convert to the required format and make it available to the new tool or new team in a seamless manner.

i. Collaboration

Applicant's invention provides design collaboration, where a design is partitioned to design tasks according to the available tools and skills. Different design tasks are conducted by different design teams (based on their registered skills and access to (or familiarity with) different design tools). Applicant's system maintains a knowledge-base of user expertise (816) and specific design task and tool expertise available (database 817). In addition, Applicant's system maintains a knowledge-base of expertise and clearance level required by a design (823) and all internal and external dependencies (821). Applicant's system then matches the right expert with access to the required tools and resources to the appropriate design task.

No such capability is described for *Robertson*'s system. The collaboration described by *Robertson* is a passive collaboration and does not include any design task collaboration (*see* col. 9, lines 4-14). *Robertson*'s system collect user data for keeping track of access stats and web traffic patterns, application usage as well as to provide information to external suppliers (col. 9, lines 14 - 30).

Further, the system and method described by *Robertson* does not provide collaborative design where design is partitioned to distinct design tasks and then each task is matched to a specific expert in different location or to a specific resource in different location. *Robertson* defines a system for selecting components from a menu or list via Internet to perform a design task as shown in the following statements (col. 5, lines 39-42; col. 10, lines 3- 10). There is no partitioning of design and no assignment of design tasks to individuals in different locations.

ii. XML document versus SOCML

Applicant's system describes an XML schema·to serve as a container and exchange mechanism for design data description as well as the design data files and rules themselves (Figures 4, 5, 6). It appears that Applicant's use of the term XML has confused Examiner into thinking that a standard XML language function is being utilized, as with use of XML to create a document that is then passed from one device to another. However, Applicant's system provides a mechanism where dispersed and heterogeneous design data and design service expertise are converted and presented in a unified schema (SOCML) and not just a generic XML format (*see* Fig 4 - 405, 403, 406, 408, etc.).

Robertson describes a set of independent databases that can be configured in a distributed fashion through secure XML tunnels (col. 8, lines 61 - 67). *Robertson* never contemplates or suggests the use of SOCML, which has a completely different functionality than a generic XML. *Robertson's* system would not require SOCML because *Robertson* teaches a different operation than the design operation provided by Applicants' invention. Neither *Robertson* nor *Dole* provides any specific XML schema or methods on seamless integration of design data.

RAL920000098US1   -13-

Dole uses XML to describe the methodology steps (col. 16 lines 48 - 62) and not for a design data representation schema. *Dole* describes the design methodology (list of steps and list of actions to be performed in each step) in XML in one or multiple XML files or HTML files (*id.* at lines 58-62). No specific XML schema and no specific standard is defined. *Dole's* use of XML to describe methodology (listed in col. 16, lines 20-30) simply uses XML to document list of tasks to be performed in a design. The document list neither relates to collaboration among various design team members nor does it involve management of design expertise or access to design database or utilities.

In Figure 4 and 5 of Applicant's specification, Applicant describes methods for extracting the necessary design data and design attributes to provide logic synthesis and design behavioral synthesis. These syntheses are possible because of the central unified SOCML schema and repository, which is very different from adding some loosely defined scripts to define a design scenario script (methodology), as suggested by *Dole*.

B. Claim Rejections

i. Claim 2

Applicant' Access_Privilege_manager maintains a user expertise profile as well as a designer role profile. Based on the designer role, access to different design files, rules and tools are granted during the collaboration. In addition, a database of external expertise profile allows outsourcing of design tasks to the appropriate design teams and designers (described in page 7 lines 1-4 of the specification). None of the above user expertise profiling is available in *Robertson's* system. *Robertson*, at col. 15, lines 2-20 describes a method for gathering user profile such as name, ID, password, etc. However, *Robertson* does not include any information on the user expertise and the tools and utilities they are familiar with, as is provided within Applicant's claimed invention and described on page 6 lines 15-22 of the specification.

ii. Claim 3

Applicant's Claim 3 defines methods for exchange of applications and design services between multiple locations by sending the request for a design service or request for access to a tool via standard protocol defined in XML format based on SOCML schema. Also, Applicant's

invention provides search and match methods to formally define the actual expertise and tools required to perform a design task and then identifies the most appropriate sources of such expertise and makes them available to the user. This help could come from an expert system, from a human expert, from a design tool, etc.

Robertson, at col. 27, lines 34-48 defines a user sending an email message to an expert and requesting help. *Robertson* never describes or suggests any automation and/or a standards service request-exchange protocol. Rather, *Robertson* describes a traditional one-on-one collaboration where a phone or email or pen and paper medium is used to define a problem to which an expert then responds.

iii. Claim 4

In addition to other features, Applicant's Claim 4 recites SOCML, which is a specific XML schema to define System-on-a-Chip design data and a standard for storing and transporting SOC specification and design data. Arguments for SOCML are provided above. Additionally, col. 16, lines 20-39 of *Dole* describes how to use XML to define a methodology, i.e. a set of design steps and an ordered list of tasks. This could be done in HTML, a flow chart, or plain English. *Dole* does not define a standard protocol for defining and representing a methodology, and his description of using XML to define methodology does not apply to SOC and does not offer any standards or protocol schema.

iv. Claim 5

Applicant's Claim 5 defines methods to implement the SOC XML schema and its associated methods (i.e. Java) so it can be deployed on any platform (Windows, Linux, AIX, Unix, etc.) and accessed via Internet (browser) or command line. A number of such Java methods are described in Figure 4 (411, 413, 415, 417).

Dole, at col. 16, lines 66-67, simply describes a converter that takes multiple XML files and converts them to a single XML file. There is no XML schema or a standard protocol involved nor any platform independent methods.

RAL920000098US1   -15-

v. Claim 6

Applicant's Claim 6 describes a framework that allows partitioning of design into distinct design tasks and operations where each task or operation can be delegated (assigned, outsourced, contracted) to the best matched expertise and resources. In contrast, *Dole* describes how design programs can be used on computers manufactured by different companies (SUN SPARC or a PC) or different computer types (Laptop, workstation, etal.) (col. 4, lines 48-63). While it is true that design programs and utilities can be run on SUN, Linux machine, Windows, etc., this has nothing to do with partitioning of design tasks or providing an environment for collaborative design.

vi. Claim 7

In Claim 7, Applicant describes how design data and design files can be converted to a format suitable for another design team. Thus, for example, if a design task is outsourced to a team in another country, Applicant's invention may then use the appropriate XSL style sheet and XSLT transformers (412) to convert the necessary design data, design rules, design files, design documentations (405) that would match the tools and utilities the receiving team has access to or formats and languages they are familiar with.

Col. 16, lines 31-39 of *Dole* describes how XML can support multiple languages. However, *Dole* does not discuss converting design specification and design data from one format to another, which could be used to convert an English documentation to Chinese, for example. *Dole* does not mention or suggest any design data or design rule conversion and *Dole* also does not mention or suggest the use of XSL Style Sheet or XSLT transformers.

vii. Claim 8

In Claim 8, Applicant further extends the notion of transforming design data from one format to another and Applicant utilizes the methods of claim 7 to transform design data to an industry standard (if such a tool existed). For example, if GDS is considered industry standard for description of an IC physical data, then appropriate XSLs and XSLTs can be defined to transform a number of popular formats to GDS format.

RAL920000098US1   -16-

Dole at col. 9, lines 60-67 describes how both the library and design data used by EDA tools can be stored on compute server. Multiple compute servers are provided each executing a single EDA tool. *Dole* neither provides a mechanism for converting design data to a standard format nor does *Dole* advocate such an approach. Rather, *Dole* simply indicates that there will be multiple compute servers allowing different EDA tools to do their own task.

viii. Claim 9

Applicant's Claim 9 describes two standard mechanism (UDDI and SOAP) for automatically locating a required design service (described in standard SOCXML) and then, when such a service or utility is found, to provide secure and standard exchange between the provider and the requester (automatically and securely) via industry standard protocol SOAP. *Robertson* at col. 27, lines 34-48 describes how a user and an expert may communicate via email or via a real-time connection, so the user can describe his questions and the expert can answer them. Thus, while Applicant's claim is describing secure standard service and data exchange mechanism, *Robertson* is describing how a user can ask questions and receive answers via email. The latter function is in no way suggestive of the former.

ix. Claim 12

Applicant's Claim 12 describes an Access_Privilege_manager, which maintains a database of who has need and authority to access what piece of design data and what tools and what design file. The Access_Privilege_Manager and its associated functionality are described in Figures 5 and 6 and linked to processes of Figure 8 (819, 823, 829 and database 817).

Robertson at col. 15, lines 2-20 describes how information about user can be collected and used to allow a user to login to a system. *Robertson* does not deal with or suggest associating what tasks a user is capable of performing, has clearance to perform, has access to the necessary tools and databases to do so, etc.

x. Claim 13

Applicant's Claim 13 describes how a user may be authorize to access one part of design and not another (due to legal restrictions or technical requirements) and how a team will be able

to apply a design task to a collection of design data but not have access to change the design data for example. Such complex and multi-tier access and authorizations are managed by the Access_Privilege_Manager (as shown in Figures 6B and 8). The communication and exchange among various sites as described in Figure 7A and 7B is also managed by Access_Privilege_Manager.

Robertson at col. 13, lines 17 – col. 14, line 5 describes how user information is transmitted to a supplier so the user can complete a purchase. The transaction records are updated when new requests are put forth. The supplier then transmits contract information back to the user. What *Robertson* describes is a one-on-one interaction between a supplier and a potential customer. There is no management of layered access and conditional access to resources. The user is not allowed access to the tools and services on the supplier side but only to provide a request and make a purchase. Further, col. 15, lines 2-20, described previously, deals with collecting user profile and does not discuss or suggest what a user should have access to and what tools or services will be accepted from a user.

xi. Claim 14

Applicant's Claim 14 describes how the framework automatically manages the access to various design files and design tools and services (Fig 6B) for each user, design team, service provider, or program based on its access privileges and access authorizations. Such a capability allows distributed operations as shown in Figures 7A and 7B, according to the processes of Figure 8.

Robertson at col. 14, lines 14-20 describes that a user may need authorization to make a purchase and she can obtain such an authorization in different methods. Such a straight forward process does not apply to complex and hierarchical processes of integrated circuit design where a large number of expertise and tasks are involved along with rather complex licensing and contracts. A user may have access to a design file and may be authorized to perform a certain task but he may not be authorized to access the tools required.

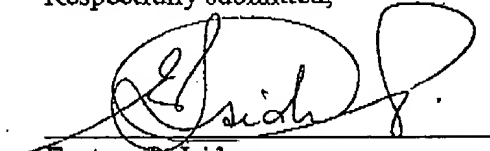RAL920000098US1   -18-

Each of the other claims is similar to one of the foregoing claims and/or is dependent on one of the foregoing claims. Given the above reasons, it is clear that the combinations of references do not suggest key features of Applicant' claimed invention. One skilled in the art would not find Applicant's invention unpatentable over the combination of references. All claims are therefore allowable.

RAL920000098US1   -19-

CONCLUSION

Applicant has diligently responded to the Office Action by clarifying features of the claims and providing detailed arguments rebutting/overcoming the §103 rejections presented. The amendments and arguments overcome the §103 rejection, and Applicant, therefore, respectfully requests reconsideration of the rejection and issuance of a Notice of Allowance for all claims now pending.

Applicant further requests the Examiner contact the undersigned attorney of record at 512.343.6116 if such would further or expedite the prosecution of the present Application.

Respectfully submitted,

Eustace P. Isidore
Reg. No. 56, 104
DILLON & YUDELL LLP
8911 North Capital of Texas Highway
Suite 2110
Austin, Texas 78759
512.343.6116

ATTORNEY FOR APPLICANT(S)

RAL920000098US1   -20-

PAGE 21/21 * RCVD AT 3/16/2005 10:03:19 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-1/0 * DNIS:8729306 * CSID:5123436446 * DURATION (mm-ss):06-30